Climate Change and the International Polar Year

Photograph by Bob Winfree

Author Bob Winfree investigates a glacier drain channel.

As we produce this, our tenth issue of *Alaska Park Science*, we are also preparing for the start of the International Polar Year (IPY), 2007-2009. The IPY is the fourth, since 1882, in a series of grand international explorations of the earth's Polar Regions. I remember the last such event, the International Geophysical Year (IGY), in 1957-1958, as a time of great discoveries and excitement. Despite Cold War tensions, thousands of scientists from across the globe jointly explored the physical structure and workings of the earths crust, oceans, polar ice caps, and atmosphere. The world's first orbiting satellites were launched during IGY, the Antarctic ice cap was measured, and the theory of continental drift was confirmed. With these scientific and technical achievements also came major accomplishments in international conservation, cooperation and peace. By the close of 1959, twelve nations had signed an Antarctic Treaty, declared that Antarctica would be used only for peaceful purposes, and committed to the continuation of scientific cooperation.

Today, 50 years from the start of the IGY, scientists from many nations have joined together again to better understand the earth's Polar Regions and to share what they learn with others. To mark the start of IPY, the National Park Service has focused this issue of the *Alaska Park Science* journal on the subject of climate change in Alaska's national parks. Our authors explore the subject from several locations, time frames, and perspectives. Alaska has certainly experienced climate change before. This is, after all, the place through which humans successfully migrated to North America some 12-15,000 years ago during the height of the last major "Ice Age." If current trends continue, and if future projections hold true, the ecological and societal effects of climate change will be considerable in the twenty-first century.

Climate change is one of the foremost issues of concern listed in the new NPS

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National Park Service photograph by Ron Karpilo

Alaska Region Science Strategy, which states that "Climate change is changing habitats, use of areas, accessibility, biotic communities, diseases and causing other effects that will change the characteristics of parks as well as the type of management actions required to maintain parks values and mission." More science, more integration and more use of the information will be critical for understanding and dealing with change. During IPY, a broad suite of arctic and climate change related projects will be underway in and around the national parks in Alaska. The NPS Arctic and Central Alaska Inventory and Monitoring Networks will implement "vital sign" monitoring on a broad suite of biological, chemical and physical indicators of ecosystem health across more than 40 million acres of NPS lands and waters in Alaska. The Southwest and Southeast networks will design and test vital sign monitoring protocols for another 15 million acres. The NPS Shared Beringian Heritage (Beringia) program will support local and international participation in cooperative research, scholarship, and cultural exchanges intended to understand and preserve natural resources and protected lands, and to sustain the cultural vitality of Native peoples in the Central Beringia region. Then, in October 2008, we will invite scientists, scholars, park managers, educators and others interested in parks and protected areas in greater Beringia to Fairbanks, Alaska, for a symposium—Park Science in the Arctic. Throughout and after IPY, scientists from the NPS, other agencies, universities, and institutions will undertake scientific and scholarly studies to more fully understand the biological, physical, cultural and social sciences and history of the national park units in Alaska. We look forward to providing information from many of these studies in future issues of *Alaska Park Science*.

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For More Information:

International Polar Year:
http://www.ipy.org/about/what-is-ipy.htm

Alaska Region Science Strategy:
http://165.83.62.205/General/AK2Day/2006ScienceStrategy.doc

Beringia:
http://www.nps.gov/akso/beringia/

Inventory and Monitoring in Alaska:
http://www.nature.nps.gov/im/units/AKRO/index.htm